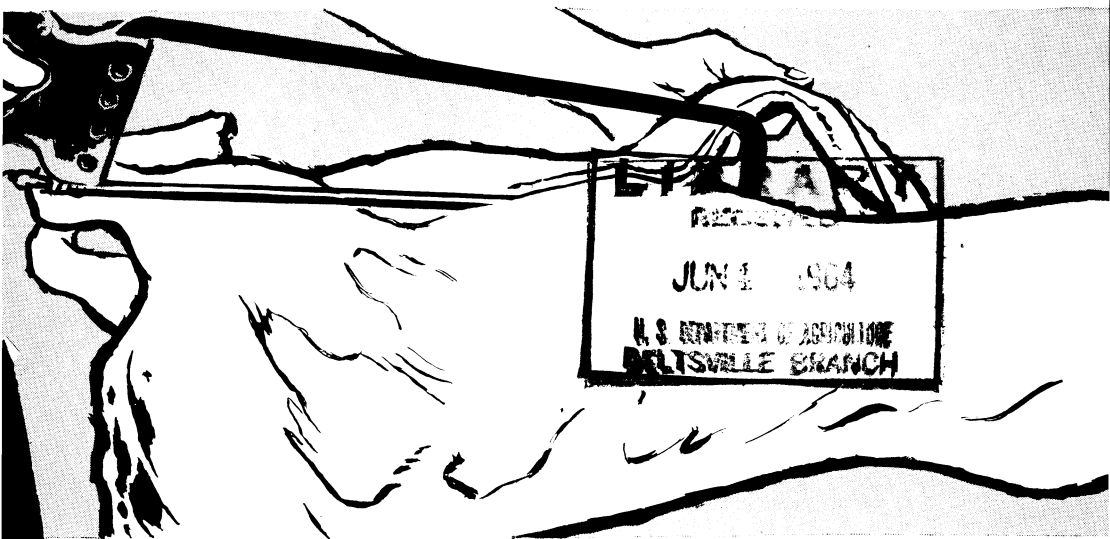


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slaughtering, cutting, and processing **LAMB and MUTTON** on the farm



FARMERS' BULLETIN NO. 2152



U.S. DEPARTMENT OF AGRICULTURE

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Precautions

To control flies and other insects at the time of slaughtering, chilling, cutting, and processing, do not use regular nonvolatile insecticides that leave residues. In spraying floors, walls, ceilings, tables, and equipment, use only insecticides that are

nonresidual, volatile, and labeled nontoxic. Before beginning work, after premises have been sprayed, floors, tables, and equipment should be washed thoroughly with hot water.

This bulletin supersedes Farmers' Bulletin 1807, Lamb and Mutton on the Farm.

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slaughtering, cutting, and processing **LAMB and MUTTON** on the farm

Prepared by

ANIMAL HUSBANDRY RESEARCH DIVISION
AGRICULTURAL RESEARCH SERVICE

SLAUGHTERING

Equipment

Equipment for slaughtering lambs need not be expensive or elaborate, but certain tools are essential. These are: A sharp knife, preferably a skinning knife; a steel for sharpening knives; a meat saw; and a 6-foot length of $\frac{1}{4}$ -inch rope.

In addition to the tools, you will need a bench, box, or clean floor to lay the lamb on; a tub for the offal; a pan or bucket for the heart, liver, and tongue; a bucket of hot water; and some clean cloths.

Care of Animals

See that all lambs selected for slaughter are thrifty and healthy.

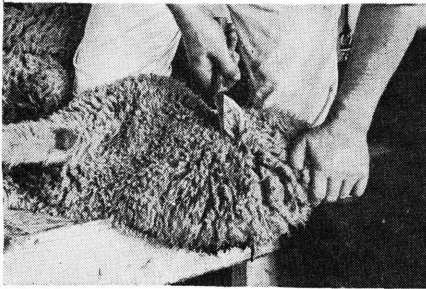
The day before slaughter, pen lambs or sheep so that they can be caught without exciting them. Supply water freely, but withhold all feed for 24

hours before slaughtering. This makes dressing easier.

Sticking

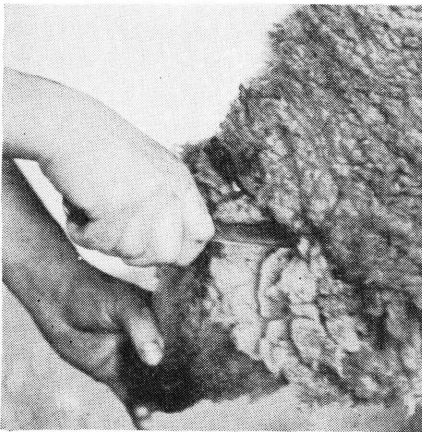
Kill the lamb as humanely as possible and in a way that will insure thorough drainage of the blood. If the lamb has been in a small pen the day before, the job of catching and stunning it without exciting will be easier.

Stun the lamb by striking it a sharp blow with a mechanical stunner or by shooting it in the forehead, midway between and slightly above the eyes. Make the first attempt successful; improperly placed blows or bullets that do not stun can cause the animal much pain. Because bullets sometimes glance from the lamb's skull or miss the mark, take care to prevent injury to persons or other livestock. Avoid using cartridges that have too heavy a powder load, because lambs have a thin skull.



48005-B

Figure 1.—Sticking a lamb on a bench.



40672-B

Figure 2.—Sticking a suspended lamb.

Prompt sticking after stunning is essential to obtain a more complete drainage of the blood. Lay the lamb on a box or bench (fig. 1) or tie the hind legs together and suspend it (fig. 2). Hold the lamb's nose with one hand; be careful not to shut off its breathing. Run a sharp, pointed knife through the neck, close to the neckbone and just behind the angle of the jaw; cut out at right angles to the neck. If the knife was not close enough to the neckbone to sever the main arteries and veins, turn the knife and cut toward the neckbone.

During the time the lamb is being stuck and is bleeding, hold the animal so that the blood will not drain into the fleece. A bloody fleece makes clean skinning difficult.

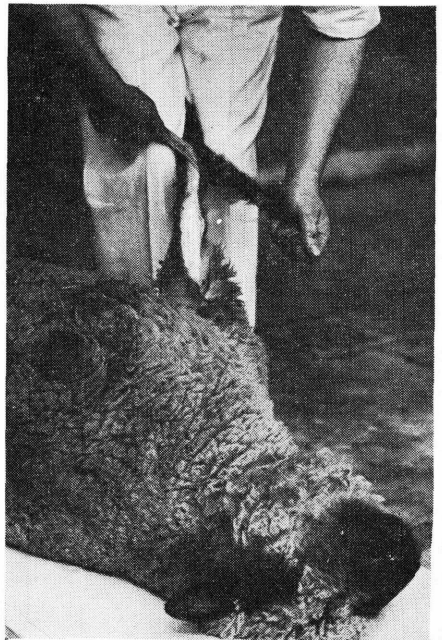
Removing Pelt

You must have clean hands if you are going to produce a clean carcass. Always have a bucket of hot water and dry cloths available with which to wash and dry your hands whenever they become soiled.

Legs

Before you begin skinning, lay the lamb on a clean floor or platform. Open the pelt by removing a strip of skin from each leg.

Stand at the side of the lamb, holding one front leg between your knees



65866-B

Figure 3.—Opening the pelt over the front of the front leg.



65867-B

Figure 4.—Opening the pelt at the brisket.

with the carcass leaning away to stretch the leg tight (fig. 3). Cut and raise a narrow strip of pelt from below the lamb's knee to the hoofhead. Extend the opening in the pelt from the point below the knee to a point well in front of the brisket.

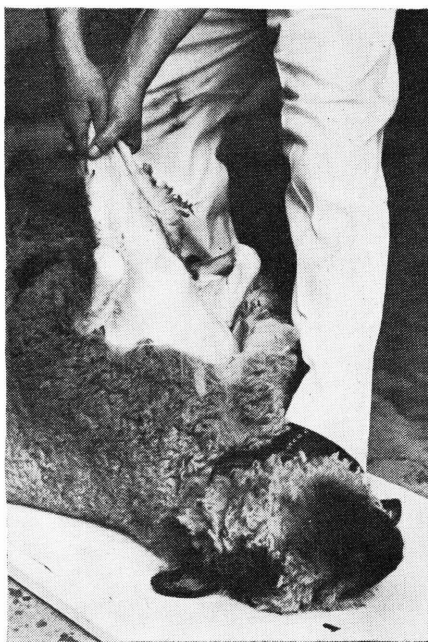
Take care not to cut through the fell. To avoid cutting through the fell and into the meat, the beginner should "choke" the knife—hold it with the cutting edge up against the skin, rather than toward the meat, and cut with a short, curving wrist motion. Swing only the point of the knife against the pelt (fig. 4). With your other hand raise the pelt from the meat and hold it tight while turning the knife against the pelt.

Join the opening over the front of the left leg to the opening over the right leg in front of the brisket. Then cut the pelt down the neck to the opening made by sticking.

A V-shaped strip of pelt has been formed over the brisket by opening the fleece as described. Grasp this strip at the end nearest the neck. Pull the strip up and back over the brisket (fig. 5). If the pelt sticks to the brisket and the fat and fell begin to tear, stop pulling and begin fisting.

With your thumb lying on top of the first finger, push the fist in under the pelt. Press the fist up against the skin, pushing and working it away from the meat, rather than pushing the meat away from the skin. With your other hand, follow along just above the first hand, grasping the wool and holding the skin taut as the fist pushes against it underneath.

Jamming through the fell and muscles of the carcass with the fists may cause an unattractive carcass but



65868-B

Figure 5.—Pulling the pelt over the brisket.

will not ruin it. With a little experience, you can tell by feel whether fist-ing is proceeding properly.

Hold the hind leg in the same way as the front leg. Cut a strip of pelt from a point below the hock, along the tendon, and into the hoofhead. Extend the cut to a point in front of the anus. Use the same careful, rotary wrist motion to avoid cutting into the choice leg muscles.

Still holding the hind leg between your knees, skin out the hocks and leg and then unjoint the foot at the lowest joint—the one next to the hoof (fig. 6). If the foot has not been properly unjointed at the hoofhead, the tendons may pull out when the carcass is hung.

Slip your knife between the legbone and the tendons to make an opening for the string or gambrel used later in hanging the carcass. Note that there



65869-B

Figure 6.—Unjointing the foot from the skinned hind leg.



65871-B

Figure 7.—Pulling the pelt free up to the cod or udder.

are two tendons. Be sure to make an opening under both, because one tendon may not be strong enough to support the carcass when it is hung up to finish skinning, remove viscera, and chill.

Skin the other hind leg. Then, pull the pointed strip of pelt back over the cod or udder as far as it will go without tearing the flesh (fig. 7).

Lay the lamb, back down, on a bench or box of convenient height.

Fist in on one side of the brisket to loosen the pelt to the navel or as far as you can reach conveniently (fig. 8). Work down behind the shoulder but do not try to loosen the pelt along the whole side. Then, fist in on the other side of the brisket.

The pelt usually sticks to the brisket but sometimes it can be worked loose from behind. Or you can work it loose from each side with your thumb; occasionally a knife is needed to cut the skin from the center of the brisket.

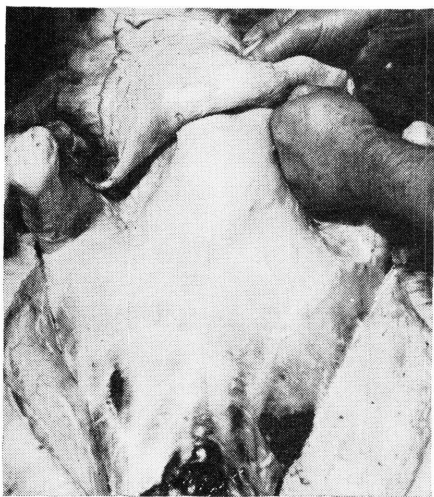
To loosen the pelt at the rear, stand between the hind legs, grasp the pelt with one hand, and fist down the center or over the cod or udder to the navel with your other hand (fig. 9). Then, push your fisting hand and arm sideways to free the pelt over the flank and inside the hind leg.

Note that fisting is begun down the middle instead of at the sides as was done when skinning the brisket. This lessens the danger of tearing the flank muscles.

Carcass

When the legs are skinned and belly is fisted, run a heavy clean cord beneath both tendons of each hind leg, tie it around the legs, and suspend the carcass. A gambrel may be used in place of the cord. A hook or support about 7 feet from the floor gives a good working height.

Cut the pelt open down the middle of the belly and loosen the navel (fig. 10). Holding the pelt tight with one



65873-B

Figure 8.—Fisting the pelt down the side of the brisket.



65872-B

Figure 9.—Holding the pelt tight and pushing the fist forward over the cod or udder.

hand, fist around the stifle and up the outside of the left leg with your other hand (fig. 11). Change hands, or cross hands, and fist out the lamb's right hind leg. This rolls the fleece away from the clean carcass.

Fist down past the shoulder, pull the skin free from the foreleg, and fist out the side of the neck (fig. 12). Push the pelt free from the sides and fist off the rump. If the pelt sticks at the rump, it may be necessary to free it by working from both sides. From underneath the dock, push up until the pelt hangs only by the skin that is fastened to the anus and tail (fig. 13).

To free the pelt at the front legs, score the joint at the lower end of the front leg and break back and sideways. In lambs, the joint is a cartilaginous suture that can be broken apart.

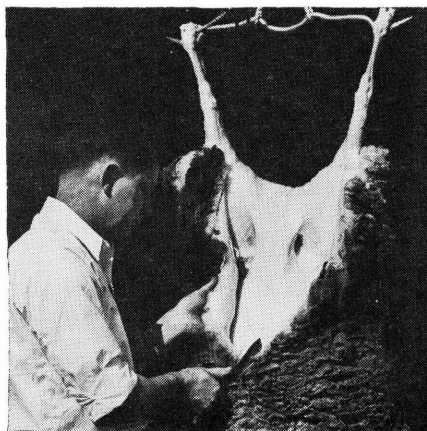
This "break" joint (fig. 14) is at the widest bulge in the end of the foreleg, or just above the true or "mutton" joint. Cutting off the forefeet of lambs at this suture helps to identify the carcasses as those of lambs.

Cut or nick the membranes on the side of the leg just over this lamb joint. Break the joint open at the cut by pressing the foot back and sideways; hold the leg against your knee if necessary.

While the pelt is still hanging and stretching the tail, cut around the anus and loosen it so that 10 or 12 inches of the colon can be pulled up and out of the body cavity. Empty or tie the colon so that its contents will not foul the carcass. Then cut the colon and allow it to fall back into the body cavity.

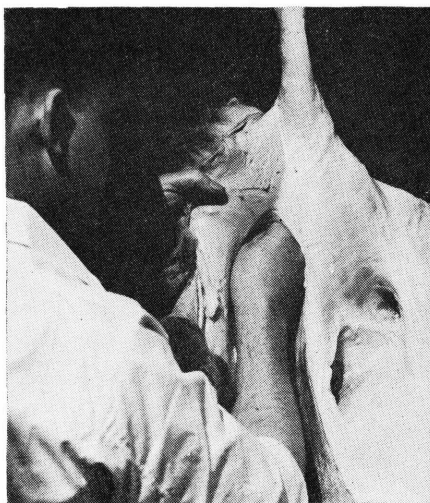
Cut and pull the skin free from the dock and pull and fist it free from the back. If the fell or muscles start to tear, fist below the break, working up and around it to avoid further tearing. Pull the pelt down and over the neck (fig. 15) to the ears and cut off the head at the atlas joint.

To clean and bleach the carcass, wash it with water as hot as your hand can stand. Wipe the carcass dry with clean cloths wrung out in hot water.



65874-B

Figure 10.—Opening the pelt down the middle.



65875-B

Figure 11.—Wedging the fist in and up—along the leg.

CUTTING

Dressing the Carcass

Open the carcass down the middle from just below the cod or udder to the cartilage of the breastbone or brisket (fig. 16). Be careful not to cut into the paunch.

Allow the paunch and intestines to roll out and hang. Unless the lamb is full of feed, the paunch should not break loose. Reach in and find the loosened colon end. Pull and work it down past the kidneys. Then, remove the bladder, taking care not to spill its contents on the meat.

Roll out the paunch slightly and grip it firmly with one hand where it joins the intestines. Work your other hand into the body cavity, above and behind the liver. Tear the liver free where it is attached near the right kidney.

Still keeping a firm hold on the paunch, work one hand under it along

Flavor of Lamb

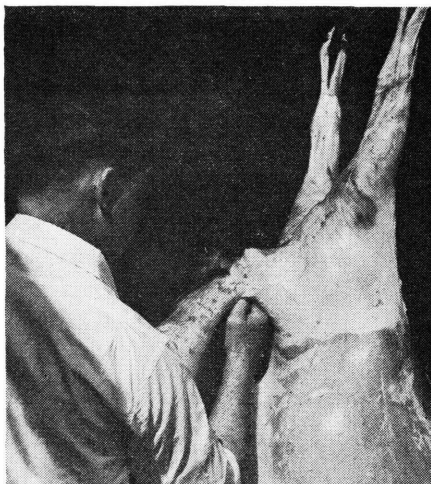
About two-thirds of the lamb eaten in the United States is consumed in the section that lies north of Washington, D.C., and east of Pittsburgh. Only a small amount of lamb is eaten by the residents of rural areas. The sectional popularity of lamb probably is not caused by differences in the tastes of the respective populations but by established food habits.

Many farm families who were not familiar with lamb have found that they enjoy its flavor and have added this meat to their regular diet.



65876-B

Figure 12.—Pushing the pelt away from the foreflank and shoulder.



65877-B

Figure 13.—Fisting the pelt free from the back.

the diaphragm and pull and push the organs up and out of the carcass.

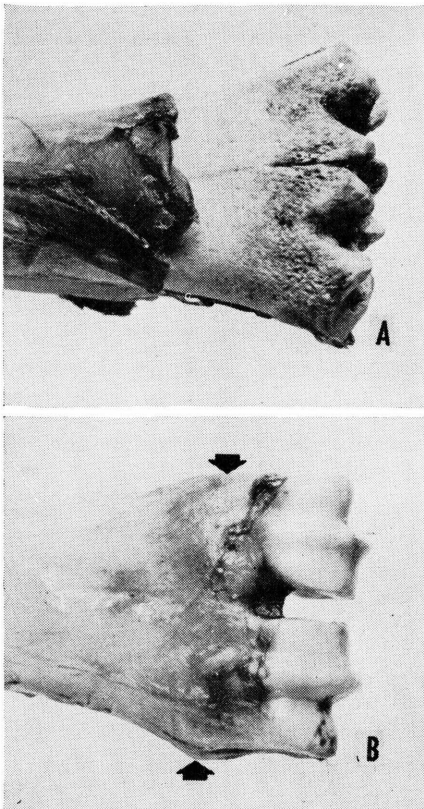
Tie the gullet with a stout cord where it enters the chest cavity; then cut the paunch free by severing the gullet below the cord. The cord prevents the escape from the stomach of digestive contents when the gullet is severed. Put the offal in a clean tub for later inspection.

Split the breastbone or brisket. If the animal is over 1 year old, you may need a saw as well as a knife. To remove the pluck (heart and lungs) cut the white part of the diaphragm, near the ribs, cut free the pluck on each side of the brisket, loosen or cut the large blood vessels along the backbone, and pull the pluck and the blood vessels down and out (fig. 17). Wash the carcass and wipe dry.

Use care in removing the liver, a choice product. You can remove the gall bladder from the liver by pinching under the neck or small end of the bladder with your thumb and forefinger. Tear or cut this end free and

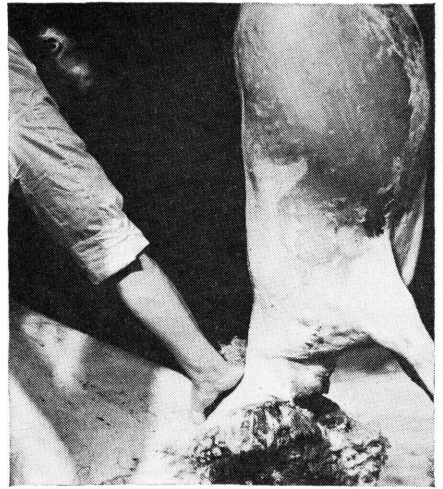
Caution

Cured or cured and smoked lamb may become dried out and strong flavored when stored at room temperature for over 4 weeks. To prevent drying, yet retain flavor, you can bone the cuts and can them in a pressure cooker, or wrap and put in the freezer.



65892-B

Figure 14.—Two types of joints of the foreleg: A, The false or "lamb joint," and B, the true "mutton joint" of a mature sheep. The arrows indicate the location of the lamb joint or suture.



65878-B

Figure 15.—Pulling the pelt free from the neck.

gently pull the bladder from the liver. Another method is to cut into the liver, behind the gall bladder. If the gall bladder breaks and the gall spills on the liver or carcass, wash promptly to remove any possible bitter flavor.

Wash the liver, heart, and tongue carefully in cold water and hang them up to chill. The head may be split open and the brains removed.

The caul fat, if clean, may be used in cooking. Separate the fat from the small intestines by pulling them apart carefully.

You should strip the contents from the intestines and open the fourth, or true, stomach to see if tapeworms or stomach worms are present. The lungs and liver should be examined also for parasites or disease that may be making headway in the flock.

Chilling the Carcass

To prevent spoiling and permit tenderizing, chill lamb carcasses to between 34° and 36° F. immediately

after dressing. Avoid freezing the dressed carcass or chilling it above 40°.

At the proper temperature, well-finished lamb carcasses can be kept 2 weeks or longer before preserving or eating.

This aging period permits the normal action of enzymes or other ripening agents present in meats to increase its tenderness. At temperatures above 40° F., mold and other surface contamination develop more rapidly and the storage period must be shorter. Thin Utility and Good grade lambs should not be aged more than 1 week.

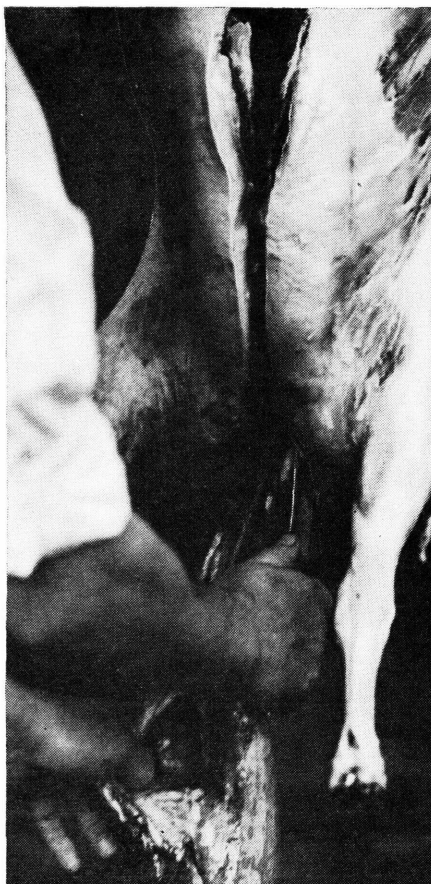
A clean carcass, protected by dry, unbroken fell or fat, will keep for a longer time than meat that has been contaminated or gashed in dressing.

If you want to use portions of a lamb within 4 or 5 days after dressing it, choose the braising or stewing cuts.



65881-B

Figure 16.—Use the fingers of one hand to hold the internal organs away from the knife while opening the carcass.



65883-B

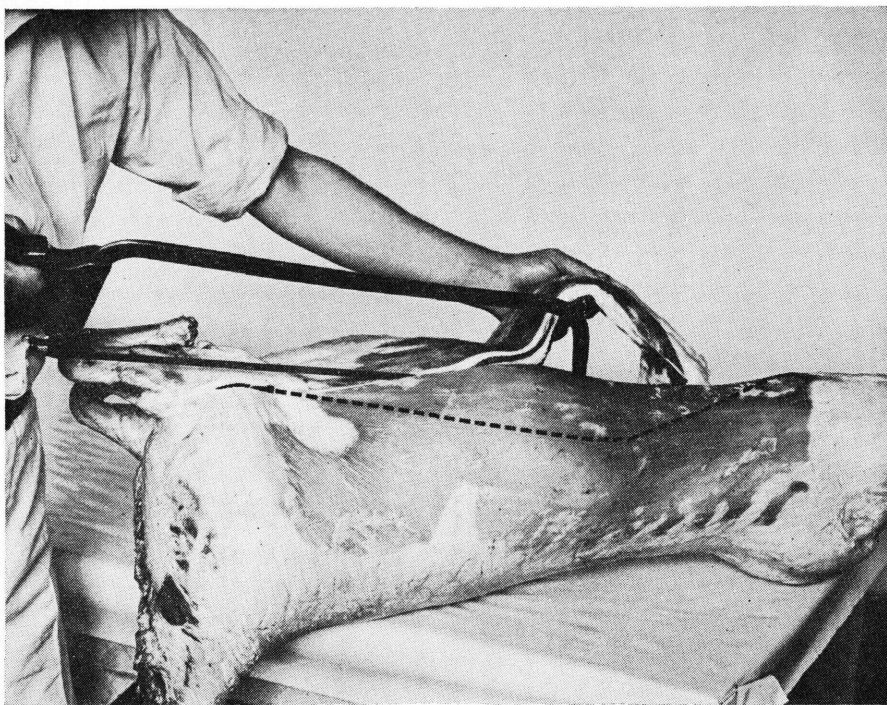
Figure 17.—Removing the heart and lungs after splitting the brisket.

Allow time for the chops and roast to age properly.

Cutting the Carcass

Begin cutting a lamb carcass by removing the thin parts, such as the breast, flank, and foreleg. Cut and saw on a line beginning at the front part of the hind leg and running to a point just above the first joint of the foreleg (fig. 18).

More of the rear flank and lower ribs can be left on the breast to make



65888-B

Figure 18.—The first step in cutting a lamb carcass—removing the breast. This carcass is being cut for long chops. If the cut had been made along the dotted line, there would have been a larger proportion of breast and shorter chops.

shorter chops by running the line higher at the rear. However, the cut across the lower shoulder should be close to the joint in the foreleg to leave the shoulder roast as large as possible.

A full-size shoulder roast (with five ribs) is cut off between the fifth and sixth ribs (fig. 19). Leave all the remaining ribs on the rib cut, or rack.

Cut and saw the loin from the legs through the small of the back or just forward of the hipbones. The loin and rib cuts need not be separated until you cut them into chops.

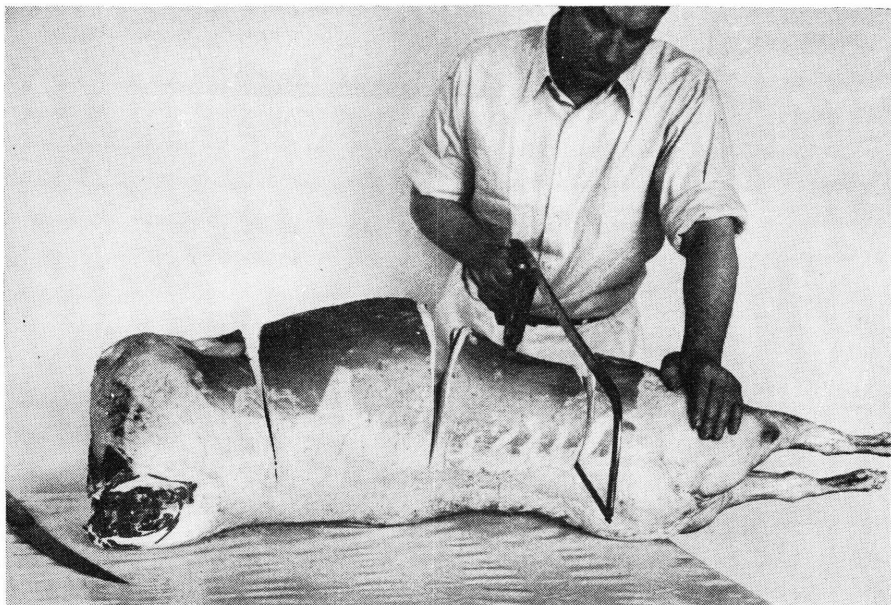
The neck can be cut and sawed off flush with the top of the shoulder for

braising with the breast, or left on and roasted with the shoulder.

The whole carcass may be split down the center of the backbone with a saw before cutting. The beginner, however, will find it easier to divide the carcass into the "wholesale" cuts first, splitting each cut separately (fig. 20).

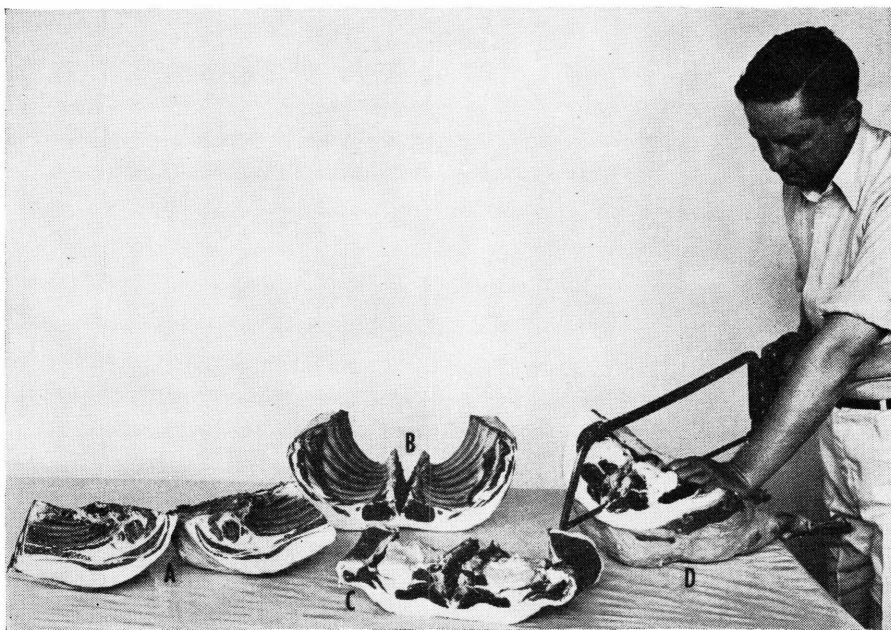
Trimming Lamb Cuts

The breast can be cut into medium to large pieces for stewing. You can keep small pieces of sharp bone out of the stew if you cut carefully and use a saw instead of a cleaver for the bones.



65889-B

Figure 19.—Making a five-rib shoulder, a regular rib cut, and a long-leg cut. The breast and neck have been removed.



65891-B

Figure 20.—Splitting cuts down the center of the backbone. The cuts shown are (A) shoulders, (B) ribs, (C) loins, and (D) legs.

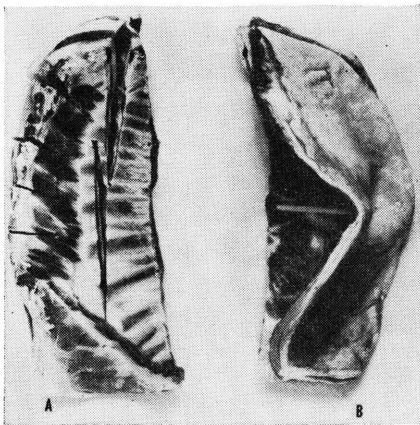
The breast may be boned and rolled or made into a pocket roast and stuffed with the ground flank or other dressing (fig. 21).

Each shoulder will yield two or three rib chops and one or two shoulder chops if you slice along the rib and across the lower or arm side. The remainder of the shoulder may be too small to roast but can be added to the stewing meat.

The full-cut shoulder makes an excellent roast. If boned (fig. 22), it is easy to carve and compares favorably with the more popular leg.

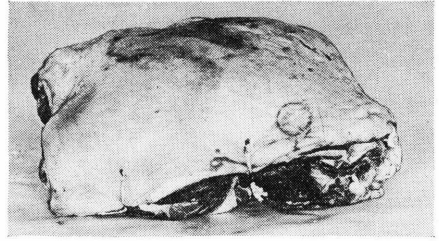
To trim the leg, remove the flank muscle and excess fat and cut off the shank where the tendons enter the meat. The forward end of the long-cut leg may be trimmed further by cutting off two or three chops.

The rib cut also may be used for roasts or made into chops by slicing between ribs and cutting backbone with a saw, cleaver, or heavy knife.



25016-C

Figure 21.—A, Breast of lamb prepared for braising; B, a similar cut opened for a pocket roast.



40976-B

Figure 22.—Cushion-style, boneless shoulder roast.

To make the loin cut into chops, first split the backbone down the center and then slice the chops crosswise of the bone. Usually chops are cut $\frac{3}{4}$ of an inch to 1 inch thick. Loin chops correspond to the T-bone steaks from a beef carcass. Double, or English, loin chops are made from a loin that has not been split down the backbone.

Remove the fell from each rib or loin chop before cooking; the fell becomes hard in frying. When the chop is dry and cold the fell peels off easily; start peeling at the lower end of the chop.

Leave the fell on the shoulder and leg roasts to lessen the evaporation of meat juices and cause the roast to cook more rapidly. Clean fell on roasts, chops, or stew meat will not affect flavor.

Lamb trimmings or the boned breast, neck, or shoulder may be ground and made into a meat loaf, or patties. Some prefer about one-fourth pork ground with lamb to lamb alone.

PROCESSING

The quality of the meat depends, in part, on the degree of finish of the animal at time of slaughter. Loin chops and the other cuts from a lamb that has not been fattened will have very little fat covering. Meat of higher

quality may be obtained from a well-bred, well-fattened lamb. Although the higher quality ribs and cuts are more desirable, either type should prove acceptable if prepared properly.

Preserving

Three ways to preserve lamb are freezing, curing, and canning. Each way results in a product that has a characteristic flavor.

Freezing

Freezing lamb does not improve its quality. To maintain the original quality be sure to—

- Freeze only high-quality cuts.
- Prepare and freeze cuts promptly (not over 10 days after slaughter).
- Prepare convenient family-sized packages.
- Protect meat from drying out (freezer burn) and oxidation by packaging in airtight and moisture-vapor-resistant materials.
- Label and date each package.
- Freeze at -10° F. or lower.
- Store at 0° F. or lower.
- Use ground and cured meat in freezer storage within 4 months.
- Do not store frozen meat more than 12 months.

To prepare lamb for freezing, cut and trim rough edges of the meat. Regular shapes are easier to wrap airtight. Lamb chops should be separated by placing a double piece of paper between each one.

Use high-quality freezer packaging material for the meat. When the meat is wrapped, spread the packages in a single layer in the freezer.

Maintain a temperature of at least -10° F. until the packages are frozen. Then, they may be stacked and held at 0° or lower.

Frozen lamb can be cooked thawed or unthawed. If you thaw meat before cooking, do it in a refrigerator.

Thawed meat should be cooked immediately or kept for only a short time in a refrigerator. Avoid refreezing thawed meat. If refreezing is necessary, do it promptly.

An unthawed roast takes one-third longer to cook than a thawed roast. Unthawed chops may take about twice as long as thawed chops.

Curing

You can cure lamb in two ways—in brine or in dry cure. After curing, lamb may be smoked. When you cure lamb, chill it to 32° to 34° F. immediately after slaughter. Begin curing within a couple of days after slaughter.

Split the ribs, loins, and shoulders down the center of the backbone. Remove the spinal cord before curing because the spinal cord spoils easily.

Cure at 36° to 38° F. A higher temperature may cause spoilage; a lower temperature may retard curing.

When storing, separate the thin cuts that are more suitable for braising from the thicker cuts that are better for roasting and broiling.

Brine cure.—A standard brine formula, used also for curing pork, can be used for lamb. It calls for 8 pounds of salt, 2 pounds of white or brown sugar, and 2 ounces of saltpeter. Dissolve the mixture in 6 gallons of cold water.

Pack the chilled, trimmed meat carefully and closely in a clean crock or well-scalded, odorless, hardwood barrel and pour in the cold (36° to 38° F.) brine until the pack begins to shift and float.

When the brine has covered the meat, use a clean hardwood board and a

clean stone to weigh down the meat.

Six gallons of brine should be enough to cover 100 pounds of meat.

Overhaul the meat on the third to fifth day. Remove the meat from the brine, pour out the brine into another container, repack the meat, and recover with the same brine. Overhauling remixes the brine and shifts the meat so that all pieces are exposed to the brine.

The thin cuts, such as the breasts, ribs, and loins, should be sufficiently cured, even in this mild brine, in 10 days to 2 weeks.

The legs and shoulders should stay in cure 25 to 40 days. Legs weighing 5 to 6 pounds should be ready for smoking in 25 to 30 days.

If the brine becomes sour or ropy, and the meat is still sound, remove the meat and scrub it in hot water; wash and scald the container. You can use the brine again if you boil, skim, and cool it. However, it is safer to make new brine and discard the old.

Dry cure.—You can use a 5-4-4 curing mixture for dry-curing lamb. This mixture consists of 5 pounds of salt, 4 pounds of sugar, and 4 ounces of saltpeter for each 100 pounds of lamb.

Mix the ingredients thoroughly. Sprinkle a little of the mixture on the bottom of a clean container. Rub and pat a proportionate amount on each piece of lamb; then fit the pieces carefully into the container. Apply about two-thirds of the mixture the first time. Use the remaining one-third when you overhaul the meat 3 to 5 days later.

The meat may be left in the cure until used or may be removed for smoking on the same schedule given for the brine cure.

Smoking cured meat.—Scrub cured lamb thoroughly with hot water and a stiff brush and hang it up to drain and dry. It may be exposed to hardwood smoke for 2 days at a temperature of 100° to 120° F. in the same manner as cured pork. You can remove the meat from the smokehouse as soon as it is satisfactorily colored, or leave it in for longer or intermittent smoking, if desired.

Storing cured meat.—If smoked lamb cuts are to be stored at ordinary room temperatures for several months, they should be cooled and wrapped in paper and muslin. Remember that cured lamb dries rapidly, particularly the thinner cuts.

Canning¹

Lamb should be canned under steam pressure at a temperature of 240° F.

Before canning, trim off most of the fat from the cuts. This reduces shrinkage and aids sterilization. Bone and roll cuts before canning to make filling cans and jars easier.

Preserving Lamb Pelts

To preserve lamb pelts hang them over a board or wire, skin side out, to cool and dry. They also may be spread on the floor, wool down, and salted.

Take care to put salt on the edges, legs, and head. Salted pelts may be piled on top of one another, all pelts fleece down. Pelts cure in 15 to 30 days. Lamb pelts may be sold to a regular hide and inedible-fat dealer.

¹Detailed methods for home canning of meat may be obtained from your county agricultural agent or the U.S. Department of Agriculture.